Art XVI.—*Note on the Accessory Glands of Cryptodrilus saccarius (Fletcher).*

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(With Plate XLIII.).

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These structures are present close to the male and female genital openings, though they are more numerous near the latter. Their arrangement seems to be in four main groups, one between segments 12 and 13, one on 18 between the male openings, one between 21 and 22, and one between 22 and 23. In one specimen, however, that in which the groups of gland cells were most numerous on 18, there was a very small and inconspicuous structure between 18 and 19.

The accessory gland between segments 12 and 13 may be taken as typical, since they all have the same histological structure, differing only in the number of patches of glandular cells in one group. On the mid-ventral surface, on the depression between the segments, is an oval area, bounded by swollen lips, in the middle of which are two rounded patches, marking the glands themselves. As a rule there are two of these patches (Fig. 1), but they may be more numerous, as many as four in segment 18 being observed in one specimen (Fig. 2), while occasionally, in the glands posterior to the male opening, there is only one. It seems probable that the condition of the accessory structures varies with the age of the worm, their number, however, being practically constant. In section the glandular patches are seen to be flask-shaped structures, composed of swollen, mucus-secreting cells, (Fig. 3, g.c.), elongated at right angles to the surface, and apparently each opening independently to the exterior. The circular muscle of the body wall becomes practically obliterated at this point, while glands of what appear to be connective tissue or muscle fibres pass out among the epidermal cells, which are here elongated, as compared with

the ordinary columnar of non-glandular areas, and in among the longtitudinal fibres (Fig. 3).

Accessory copulatory structures are common among Oligochaetes, being called by various names, and Fletcher describes their external appearance in *C. saccarius*,[1] but I have not found their minute structure mentioned elsewhere. Spencer[2] points out a large development of glandular cells in the clitellar region of *Megascolides australis*, evidently similar in histological structure to those of the accessory glands in *C. saccarius*, but differing in not being grouped to form separate organs. He also notes the penetration of the epidermis by fibres, but describes the epidermal cells as being shorter than elsewhere, while in *C. saccarius* they are longer around the glandular patch. It is evident that the function of these secreting cells in the clitellar region is connected with the formation of the cocoon; the fact of their being collected into patches around the genital openings, however, seems to point to their function here being principally to secrete mucus, which would aid in the passage of the reproductive elements to the cocoon and of the body of the worm through it without friction.

Since going to press I find that a very similar set of accessory structures has been described and figured by Miss G. Sweet (Linn. Soc. Journ. Zool., vol. xxviii.) in *Digaster excavata* and *Megascolex dorsalis*.

EXPLANATION OF PLATE XLIII.

Fig. 1.—External appearance of an accessory gland of *C. saccarius* between segments 12 and 13.

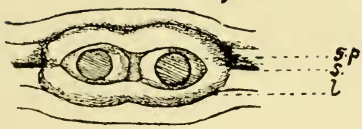
Fig. 2.—The same around the male opening, segment 18.

Fig. 3.—Low power drawing of the accessory glands and associated structures between segments 12 and 13 in *C. saccarius*. (Outline with camera lucida).

1 Proc. Linn. Soc. N.S.W., 1889.

2 Transactions of Roy. Soc. Vict., vol. i., pt. i., 1888. The Anatomy of Megascolides australis.

Fig. 1.



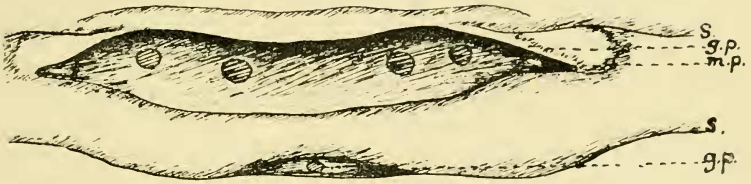


Fig. 2.

Fig. 3.